UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/582,983	01/05/2007	Yuichi Kawano	0965-0472PUS1	8160

2292 7590 04/22/2009

BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER	
LUND, JEFFRIE ROBERT	

ART UNIT	PAPER NUMBER
1792	

NOTIFICATION DATE	DELIVERY MODE
04/22/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No.	Applicant(s)	
	10/582,983	KAWANO ET AL.	
	Examiner	Art Unit	
	Jeffrie R. Lund	1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 December 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4-8 and 11-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4-8 and 11-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 June 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *8/22/08*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1, 4-6, and 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanai et al, U.S. Patent No: 5,874,012, in view of Sajoto et al, US Patent 6,056,823, Maeda et al, US Patent 5,620,523, and Shim et al, US Patent Application Publication 2003/0041804 A1.

Kanai et al teaches a plasma processing apparatus, comprising: gas supply (15, 16) means for supplying a gas including a reactant gas to an interior of a chamber (4); pressure control (17, 18, 19, 20) means for controlling an internal pressure of the

chamber (Col. 5, Line 2-8); plasma generation means for generating a plasma of the gas in the interior of the chamber (4); and a susceptor (10), installed in a lower portion of the interior of the chamber, for supporting a substrate (11) to be processed, and further comprising a wall surface protecting member (6) formed in a cylindrical form and provided in the interior of the chamber, for preventing adhesion of a plasma processing-associated product onto an inner wall surface of the chamber (Col. 4, Line 35-67, Col. 5, Line1-29) and the chamber includes a chamber step portion (see Fig. 5) provided to the inner wall surface of the chamber, for supporting the wall surface protecting member (6) from below to cover the inner wall surface of the chamber located above the susceptor (10); a gap (14) between the outer cylinder (5) and inner cylinder (6) and in the gap; a corrugated plate (30) contacts the lower outer cylinder and the inner cylinder with a spring force and the contact force between the outer cylinder and the inner cylinder is increased by springs 31, 33 and the corrugated plate 30 for the purpose of absorbing any difference of thermal expansion between the outer cylinder and the inner cylinder (Col. 7, Line 16-37) (Fig.5, 6); and heating means for heating a wall surface of the chamber (Col. 5, Line 13-20) to 100°C or higher (Col 5, Line 15-20, Col 6, Line 1-6). Kanai et al teaches that: the wall surface protecting member is made of a metal and the metal is aluminum (Col. 6, Line 57-65); and the wall surface protecting member is made of a ceramic (Col. 4, Line 49-51).

Kanai et al differs from the present invention in that Kanai et al does not teach that the wall surface protecting member has a plurality of projections along an axial direction of the wall; or a gas nozzle with a gas pipe and a nozzle tip, the gas pipe is

extended upward from lower site of the chamber within a wall of the chamber or between the wall surface protecting member and the chamber, and the nozzle tip is detachable from the gas pipe and installed while passing through a hole provided in the wall surface protecting member.

Sajoto et al teaches an apparatus and also teach that the wall surface protecting member (28) has a plurality of projections (23) along the axial direction of the wall and connects with a point contact, the inner wall surface of the chamber and the chamber step portion, and wherein the wall surface protecting member is supported in the chamber by the point contact for the purpose of preventing heat transfer between the wall and the protecting member. (Figure 2)

Maeda et al teaches a gas nozzle with a gas pipe 9 and a nozzle tip 9a, and the nozzle tip 9a is detachable from the gas pipe and installed while passing through a hole provided in the wall surface protecting member. (See Figure 1)

Shim et al teaches a processing apparatus that includes gas pipe 130 extended upward from lower site 113 of the chamber 110 within a wall of the chamber. (See Figure 2A)

The motivation for adding the projections of Sajoto et al to the wall surface protection member of Kanai et al is to prevent thermal conduction from the wall surface projecting member to the wall protection member and improve the reproducibility of plasma treatment by keeping the wall protection member at a constant temperature as taught by Sajoto et al.

The motivation for adding the second gas inlet of Maeda et al to the apparatus of

Kanai et al is to enable the apparatus of Kanai et al to supply a second gas independently from the first gas as taught by Maeda et al and to deposit SiO layer as suggested by Kanai et al (Column 10 line 48-50) and taught by Maeda et al. Furthermore, it has been held that applying a known technique to a known device ready for improvement to yield predictable results is obvious (see *KSR International Co. v. Teleflex Inc.*).

The motivation for placing the gas supply pipe in the wall of Kanai et al is to preheat the gas flowing through the gas supply pipe as taught by Shim et al.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to add the projections of Sajoto et al to the wall protection member of Kanai et al; add the second gas supply of Maeda et al to the apparatus of Kanai et al; and place the gas supply pipe in the chamber wall of Kanai et al.

4. Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanai et al, Sajoto et al, Maeda et al, and Shim et al as applied to claims 1, 4-6, and 11-13 above, and further in view of Shibazaki, JP2002222767A.

Kanai et al, Sajoto et al, Maeda et al, and Shim et al differ from the present invention in that they do not teach that the wall surface protecting member has a surface oxidized and roughened.

Shibazaki teach that the wall surface protecting member has a surface oxidized and roughened for the purpose of suppressing the generation of particles within a vacuum chamber and does not deteriorate the degree of vacuum in the vacuum device (Abstract, Drawings 1-3).

The motivation for oxidizing and roughening the surface of the wall surface protecting member of Kanai et al, Sajoto et al, Maeda et al, and Shim et al is to suppress the generation of particles within a vacuum chamber and does not deteriorate the degree of vacuum in the vacuum device as taught by Shibazaki.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to oxidize and roughen the surface of the wall surface protecting member of Kanai et al, Sajoto et al, Maeda et al, and Shim et al as taught by Shibazaki.

Response to Arguments

5. Applicant's arguments with respect to claims 1, 4-8, and 11-13 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrie R. Lund whose telephone number is (571) 272-1437. The examiner can normally be reached on Monday-Thursday (10:00 am - 9:00 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on (571) 272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jeffrie R. Lund/
Primary Examiner
Art Unit 1792

JRL
4/19/09